



**SUBSTITUTE SPECIFICATION IN  
CLEAN FORM WITHOUT MARKINGS  
AS TO AMENDED MATERIAL  
PURSUANT TO 37 CFR § 1.125(c)**

## 1 ADJUSTABLE FRAME FOR HOLDING PAINT ROLLER

## 2 BACKGROUND OF THE INVENTION

### 3 Field of the Invention:

4 The present invention relates to frames for supporting rollers having cylindrical  
5 bodies and being able to roll, and particularly, the present invention relates to a frame for  
6 supporting a paint roller for coating a pigment or a paint on a wall surface of a building or  
7 furniture, etc.

## 8 Description of the Prior Art:

9        Usually a frame for supporting a paint roller has a pair of arms with generally  
10      symmetrical bent shapes. Each of the arms has its distal part generally in parallel to the  
11      other and a shaft on the distal end to insert into the hole on one of the two ends of the paint  
12      roller to support it for rotation. Each of the arms also has its joint part fixed to or formed  
13      into a T-shape joint with a handle. The pair of joint parts form a fixed length, *i.e.*, an  
14      unchangeable distance between the two ends of the pair of shafts, which means that the  
15      frame can clamp and hold only one longitudinally sized paint roller. That is to say that the  
16      prior art frame is not capable of fitting and holding a variety of longitudinally sized paint  
17      rollers, which results in an inconvenience in the operation of various paint rollers.

## SUMMARY OF THE INVENTION

2 Having outlined the state of the prior art and its attendant shortages, the present  
3 invention's object is to provide an adjustable frame that is capable of adjusting the holding  
4 length of the frame to support and clip a wide variety of longitudinally sized paint rollers,  
5 moreover, the adjustment is flexible and the clipping force is strong.

6 The present invention provides an adjustable frame for holding a paint roller. The  
7 frame comprises a pair of square arms having uniform bent shapes and are configured  
8 symmetrically. Each of the square arms includes a distal part that is opposite to the other  
9 distal part, a joint part that is assembled opposite to, and in line with, the other joint part, a  
10 pair of shafts that are opposite to each other and are respectively fixed at the ends of the  
11 distal parts for inserting into the holes on the two ends of the paint roller, and a pair of  
12 racks that are opposite to each other and are respectively fixed at the ends of the joint parts.  
13 A square tube is straight, holds the pair of joint parts respectively through its two ends, and  
14 holds the pair of racks into its internal space accordingly. The pair of racks mesh with a  
15 gear wheel, across the gear wheel, within the internal space of the square tube. A tee-joint  
16 holds the square tube. Both the square tube and the tee-joint have a pair of bearing holes  
17 through their walls. The pair of bearing holes hold up a bar, to which the gear wheel is  
18 fixed. At least one knob is fixed to one of two ends of the bar, outside the wall of the tee-  
19 joint.

20 The adjustable frame for holding a paint roller of the present invention allows an  
21 operator to freely adjust the holding length formed by the joint parts of the square arms that  
22 are fitted into the square tube's internal space respectively through the square tube's two  
23 ends. By rotating the knob, through the bar and gear wheel, the racks move and  
24 consequently draw the distal parts away from, or close to, each other. The operator can

1 change the holding length of the frame, *i.e.*, the distance between the two ends of the pair  
2 of shafts and fit the pair of shafts tightly against any paint roller of different lengths. In  
3 other words, the present invention provides a holding-length adjustable frame that is  
4 capable of flexibly and tightly clamping and holding a variety of longitudinally sized paint  
5 rollers.

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## **BRIEF DESCRIPTION OF THE DRAWINGS**

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## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

2        As shown in **Figures 1, 2, and 3**, an adjustable frame for holding a paint roller  
3    comprises a pair of square arms **2** and **4** having uniform bent shapes. Each of the pair of  
4    square arms **2** and **4** includes a distal part that is in parallel to the other distal part, a joint  
5    part that is assembled opposite to, and in line with, the other joint part, a pair of shafts **3**  
6    that are opposite to, and in line with, each other and are respectively fixed at the ends of the  
7    distal parts for inserting into the holes on the two ends of the paint roller (*not shown*), and a  
8    pair of racks **8** and **12** that are opposite to each other and are respectively fixed at the ends  
9    of the joint parts. A square tube **1** is straight, holds the pair of square arms **2** and **4**  
10   respectively through its two ends, and holds the pair of racks **8** and **12** into its internal  
11   space accordingly. The pair of racks **8** and **12** mesh with a gear wheel **9**, across the gear  
12   wheel **9**, within the internal space of the square tube **1**. A tee-joint **7** holds the square tube  
13   **1**. Both the pair of square arms **2** and **4** and the tee-joint **7** have a pair of bearing holes  
14   through their walls. The pair of bearing holes hold up a bar **9'**, to which the gear wheel **9** is  
15   fixed. One knob **9''** is fixed to one of two ends of the bar **9'**, outside the wall of tee-joint **7**.

16        The racks **8** and **12** are fixed respectively at the ends of the joint parts with screw  
17   fasteners **13** and **14**.

18        The adjustable frame also comprises a pair of fastening sets that are configured  
19   respectively at the two ends of the square tube **1**. Each of the pair of fastening sets includes  
20   an inner pipe **5** having male threads on its outer wall and an outer pipe **6** having female  
21   threads on its cone-shaped inner wall. The inner pipe **5** holds both the square tube **1** and  
22   the joint part of an associated square arm **2** or **4**. The outer pipe **6** fits the inner pipe **5** to  
23   enhance the holding force between the square tube **1** and the joint part of the associated  
24   square arm **2** or **4**.

1        The tee-joint **7** includes a screw socket **15** having female threads on its inner wall to  
2    couple with a handle **11** and has male threads on its cone-shaped outer wall to couple with  
3    a screw tube **10** having female threads on its inner wall.

4        Before or after a coating operation, the operator may loosen the outer pipe **6** from  
5    the inner pipe **5** by rotating it, then rotate the knob **9** and consequently the gear wheel **9**  
6    moves the pair of racks **8** and **12** to bring the pair of ends of the pair of shafts **3** away from,  
7    or close to, each other in order to adjust the holding distance between the pair of shafts **3**.  
8        By using the above adjustment, the operator can tightly fit a new paint roller having a  
9    different length from the replaced one on the frame, and then rotate the outer pipe **6** on the  
10   inner pipe **5** to tighten the inner pipe **5** for enhancing the coupling force between the joint  
11   parts of the pair of square arms **2** and **4** and the square tube **1**. The operator may also fix a  
12   handle **11** into the screw socket **15** and further tighten it with the screw tube **10**.